Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1 (currently amended). A gas analyzing method, comprising:

a) filling a flame cell with a sample gas;

b) injecting a mixture into said flame cell,

~~b) burning a mixture within said flame cell~~, said mixture including a fuel and an oxidant present in proportions such that ~~said~~ burning said mixture creates a diffusion flame ~~including~~ comprising an inner ignition zone and a main reaction zone;

c) measuring a temperature of said diffusion flame; and

d) calculating a concentration of combustible gases contained in said sample of gas using said temperature.

2 (original). The method of claim 1 wherein said mixture further includes a substantially neutral gas.

3 (original). The method of claim 2 where in said fuel is hydrogen, said oxidant is oxygen and said substantially neutral gas is nitrogen.

4 (original). The method of claim 3 wherein said oxygen content of said mixture is in the range of 9.4% to 10.5%.

5 (currently amended). The method of claim 1, further comprising:

e) injecting ~~burning~~ a second mixture ~~within~~ into said flame cell, said second mixture including said fuel, and burning said second mixture, thereby creating a second diffusion flame having a main reaction zone and being incapable of supporting an inner ignition zone;

f) measuring a second temperature of said second diffusion flame;

g) calculating a concentration of oxygen in said sample, said calculating including comparing said temperature and said second temperature.

6 (canceled).

7 (currently amended). A gas analyzing apparatus, comprising:

a flame cell;

a filling means for filling said flame cell with a gas sample;

~~providing~~ a flammable mixture, said mixture including a fuel and an oxidant;

an injection means for injecting said mixture into said flame cell;

a burning means for burning said mixture inside said gas sample filled flame cell, thereby creating a diffusion flame including a main reaction zone wherein said gas sample diffuses into said diffusion flame and an inner ignition zone free of said gas sample ;

a measuring means for measuring a temperature of said diffusion flame; and

a combustible gas concentration calculating means, operatively connected to said measuring means and capable of using said temperature for determining a concentration of combustible gases in said gas sample.

8 (original). The gas analyzing apparatus of claim 7 wherein said mixture further includes a substantially neutral gas.

9 (currently amended). The gas analyzing apparatus of claim 8 wherein said fuel is hydrogen, said oxidant is oxygen and said neutral gas is nitrogen.

10 (original). The gas analyzing apparatus of claim 9 wherein said oxygen content of said mixture is in the range of 9.4% to 10.5%.

11 (currently amended). The gas analyzing apparatus of claim 7, further including:

~~providing~~ a second mixture, said second mixture including said fuel;

a second diffusion flame created by using said burning means to burn said second mixture, ~~thereby creating a~~ said second diffusion flame having a main reaction zone and being incapable of supporting an inner ignition zone;

~~using said measuring means to measure~~ a second temperature of said second diffusion flame obtained using said measuring means;

an oxygen concentration calculating means, functionally connected to said measuring means ~~for determining~~ and adapted to calculate a concentration of oxygen in said sample~~, said oxygen concentration calculating including~~ by comparing ~~aid~~ said second temperature with said temperature.

12 (cancelled).

13 (currently amended). A gas analyzing device, comprising:

a flame cell filled with a gas sample;

a burner tube having a first and a second end, said first end being located inside said gas filled flame cell, and said burner tube being supplied via said second end with a mixture including a fuel and an oxidant;

a diffusion flame created inside said flame cell by burning said mixture at said first end of said burner within said gas sample filled flame cell, said diffusion flame having a main reaction zone wherein said gas sample diffuses into said diffusion flame and an inner ignition zone free of said gas sample;

a temperature sensor located near said diffusion flame capable of providing a temperature of said diffusion flame,

a calculator, operatively connected to said temperature sensor, and capable of using said temperature to determine a concentration of combustible gases contained in said sample.

14 (original). The gas analyzing device of claim 13 wherein said mixture further includes a substantially neutral gas.

15 (currently amended). The gas analyzing device of claim 14 wherein said fuel is hydrogen, said oxidant is oxygen and said neutral gas is nitrogen.

16. The gas analyzing device of claim 15 wherein said oxygen content of said mixture is in the range of 9.4% to 10.5%.

17 – 18 (cancelled).